

CHEEKY MUNKI

MAC BARTENDING MASTERCLASS

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Wizard Of Light Bulb Moments

University of Oxford IT Services











INDIVIDUALITY,
INDEPENDENCE,
INGENUITY



PATCH MANAGEMENT

SOFTWARE STAGING STRATEGY

| | | | |
|--------|--|---|--|
| Week 1 |  41.0 | |  40.0.3 |
| Week 2 | |  41.0 |  40.0.3 |
| Week 3 |  42.0β1 | |  41.0 |
| Week 4 | Unstable |  42.0β1 Testing |  41.0 Stable |

JSS MODEL



- Installer Policy + Installer SmartGroup
 - Updates:
 - Stable Update Policy + Stable Update SmartGroup
 - Testing Update Policy + Testing Update SmartGroup
 - Unstable Update Policy + Unstable Update SmartGroup
- At least 7 JSS Objects per software title



Macintosh HD
795.83 GB, 243.58 GB free

Development HD
100.38 GB, 100.19 GB free

Spare
102.85 GB, 102.66 GB free

Desktop
10 items

VIDEO

Video Illustrating the (non-automated) process on how-to model the three tier software release model in the Casper Suite on the example of updating Firefox.

[HTTPS://YOUTU.BE/CQv8i02UKAW](https://youtu.be/CQv8i02UKAW)



OLD VS NEW STYLE?

Orchard

ComputersMobile DevicesUsersFull JSS

Search InventoryLicensed SoftwarePoliciesConfiguration ProfilesManaged PreferencesRestricted SoftwarePreStage ImagingMac App Store AppseBooksSmart Computer GroupsStatic Computer GroupsEnrollment InvitationsPreStage EnrollmentsManagement Settings

Marko

1530

New

Show AllHide AllFilter Policies

| Name | Frequency | Trigger | Scope | Site |
|--|-------------------|--|---|------|
| + Communications and Web | | | | |
| - Core Software | | | | |
| + cocoaDialog | Once per computer | BuildPre | Software: Core (all OS) | None |
| + Deploy Weekly Maintenance | Once per computer | Startup, Check-in, BuildPost, Self Service | All computers | None |
| + dockutil | Once per computer | SoftwareInstall | Software: Core (all OS) | None |
| + HP Printer Drivers | Once per computer | | Software: Core (all OS) | None |
| + MMP Version | Once per computer | BuildPre | All computers | None |
| + Orchard Branding | Once per computer | BuildPre | Software: Core (all OS) | None |
| + Planting 100: Enforce Orchard Management Account | Ongoing | Planting | All computers | None |
| + Planting 200: Main Setup Tasks | Ongoing | Planting | All computers | None |
| + Ricoh Printer Drivers | Once per computer | Self Service | Software: Core (all OS) | None |
| + Sassafras Keyserver 6 | Once per computer | Self Service | Software: Sassafras Keyserver (IT-Services) Install | None |
| + Sophos Anti-Virus | Once per computer | SoftwareInstall, Self Service | Software: Core (all OS) | None |

JAMF software© 2002-2015 JAMF Software, LLC.

Orchard

Search Inventory

Licensed Software

Policies

Configuration Profiles

Managed Preferences

Restricted Software

PreStage Imaging

Mac App Store Apps

eBooks

Smart Computer Groups

Static Computer Groups

Enrollment Invitations

PreStage Enrollments

Management Settings

JAMF software

© 2002-2015 JAMF Software, LLC.

Computers

Mobile Devices

Users

Full JSS

Marko






Policies (358)

+ New

Show All

Hide All

Filter Policies

| Name | Frequency | Trigger | Scope | Site |
|--|-------------------|--|----------------------------|------|
| Core Software | | | | |
| <div>+  <u>Deploy Weekly Maintenance</u></div> | Once per computer | Startup, Check-in, BuildPost, Self Service | All computers | None |
| <div>+  <u>Orchard Branding</u></div> | Once per computer | BuildPre | Software: Core (all OS) | None |
| <div>+  <u>Orchard Software Centre</u></div> | Once per computer | Check-in, Self Service | No Orchard Software Centre | None |
| <div>+  <u>Planting 100: Enforce Orchard Management Account</u></div> | Ongoing | Planting | All computers | None |
| <div>+  <u>Planting 200: Main Setup Tasks</u></div> | Ongoing | Planting | All computers | None |
| <div>+ Scripts</div> | | | | |
| <div>+ Support</div> | | | | |
| <div>+ System Administration</div> | | | | |
| <div>+ Utilities</div> | | | | |



AUTOPKG



TRELLO



MUNKI



- Automated preparation of software for managed distribution
- Community maintained recipes (PropertyList XML) to automate complex tasks

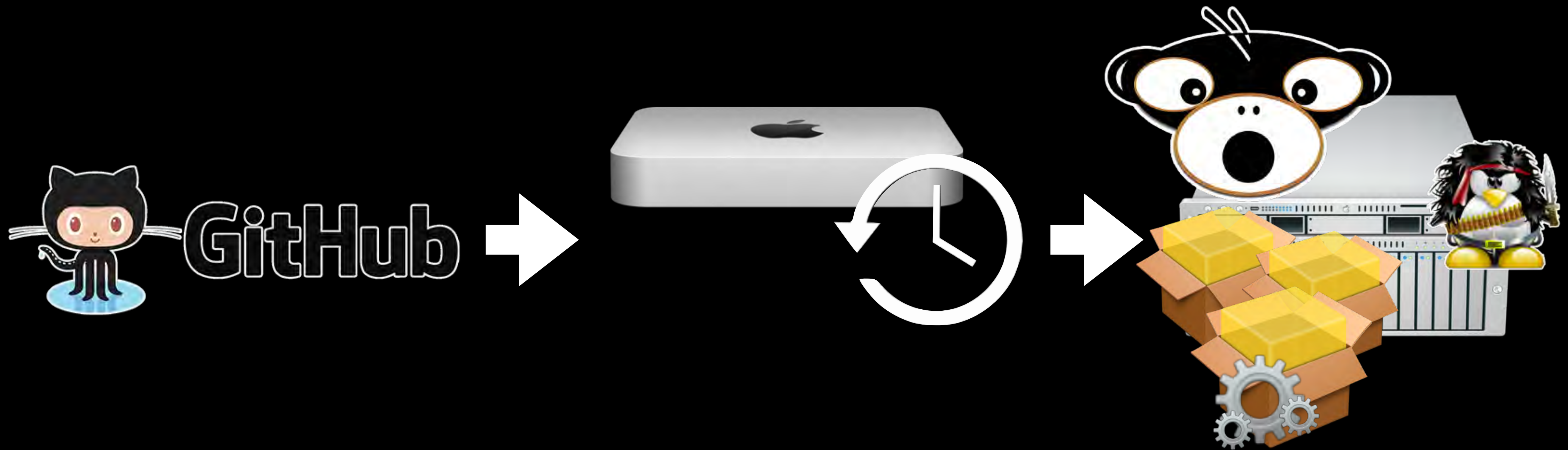
`Firefox.download.recipe`

`Firefox.pkg.recipe`

`Firefox.munki.recipe`

- Excellent integration with Munki
Workflows for management tools like Absolute Manage, Casper
- MacSysadmin 2014– G. Neagle, T. Sutton
AutoPkg: Crowd-sourcing Mac packaging and deployment
<http://docs.macsysadmin.se/2014/2014doc.html>

AUTOPKG WORKFLOW



RECIPE DEVELOPMENT
LOCAL WORKSTATIONS

AUTOPKG
BUILD HOST

MUNKI
REPOSITORY

AUTOPKG NIGHTLY BUILDS

```
#!/bin/bash
exec > >(logger -i -t autopkg-build) 2>&1

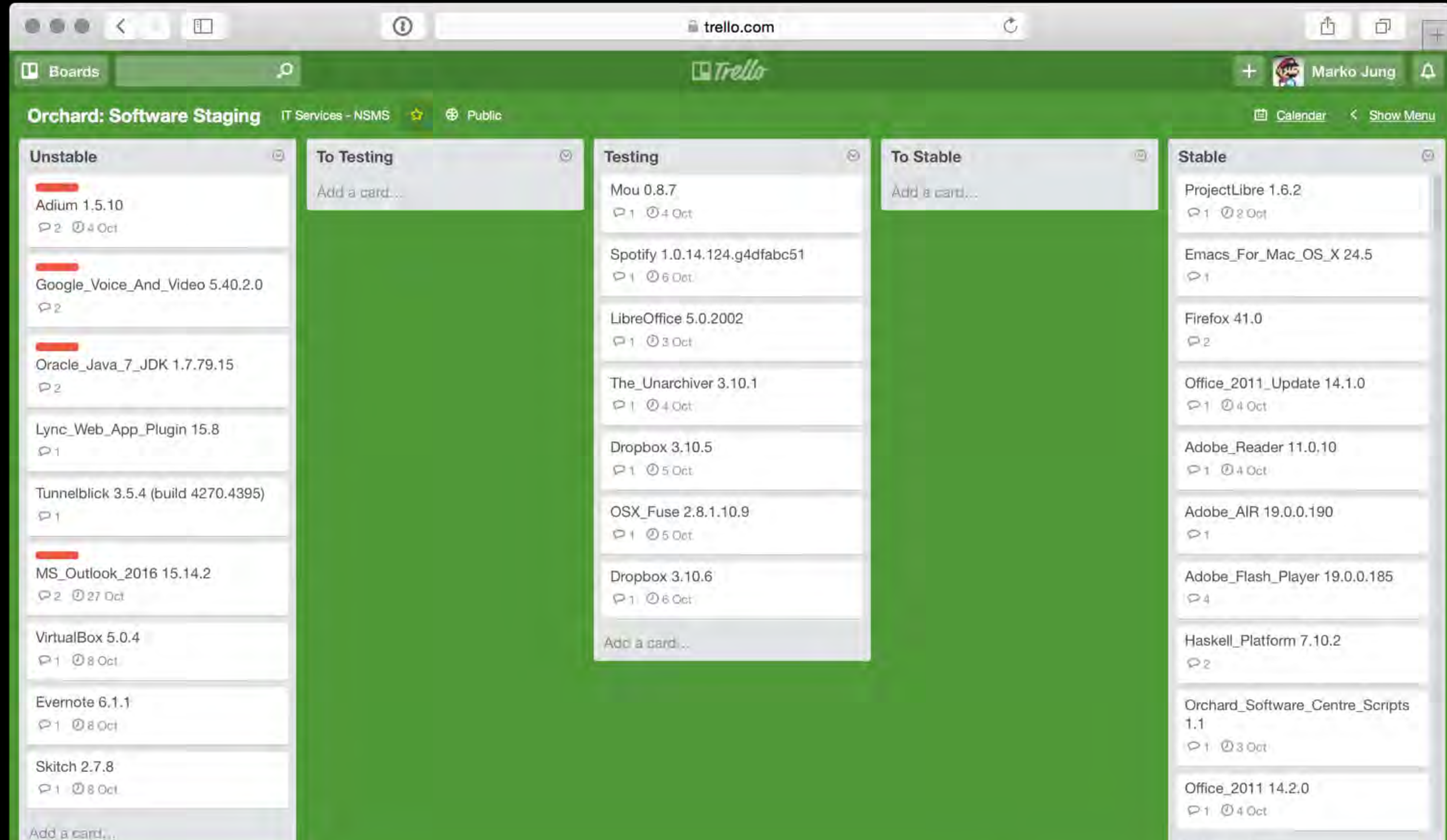
BUILD_RECIPE_DIR="/srv/autopkg/BuildRecipes"
EMAIL_ERRORS_TO='incidents@acme.corp'
my_name=$(basename $0)

set -o pipefail

echo "$(date) BEGIN AUTOPKG BUILD RUN"
for recipe in $(cd ${BUILD_RECIPE_DIR}; ls ); do
    OUTPUT_FILE=$(mktemp /tmp/${my_name}.XXXXXXXXXX)
    echo "$(date) Autopkg running ${recipe} ... "
    /usr/local/bin/autopkg run ${recipe} | tee ${OUTPUT_FILE}
    if [ $? -ne 0 ]; then
        mail -s "Failed to build ${recipe}" ${EMAIL_ERRORS_TO} < ${OUTPUT_FILE}
    fi
    echo "$(date) ... end run of $recipe"
    rm -f ${OUTPUT_FILE}
done
echo "$(date) END AUTOPKG BUILD RUN"
```



MUNKI-STAGING



The screenshot shows a Trello board titled "Orchard: Software Staging" with a green background. The board is organized into five columns representing stages in a software staging workflow: "Unstable", "To Testing", "Testing", "To Stable", and "Stable". Each column contains a list of software packages, each represented by a card. The cards in the "Unstable" column include Adium 1.5.10, Google_Voice_And_Video 5.40.2.0, Oracle_Java_7_JDK 1.7.79.15, Lync_Web_App_Plugin 15.8, Tunnelblick 3.5.4 (build 4270.4395), MS_Outlook_2016 15.14.2, VirtualBox 5.0.4, Evernote 6.1.1, and Skitch 2.7.8. The "To Testing" column is currently empty. The "Testing" column contains Mou 0.8.7, Spotify 1.0.14.124.g4dfabc51, LibreOffice 5.0.2002, The_Unarchiver 3.10.1, Dropbox 3.10.5, OSX_Fuse 2.8.1.10.9, and Dropbox 3.10.6. The "To Stable" column is also empty. The "Stable" column contains ProjectLibre 1.6.2, Emacs_For_Mac_OS_X 24.5, Firefox 41.0, Office_2011_Update 14.1.0, Adobe_Reader 11.0.10, Adobe_AIR 19.0.0.190, Adobe_Flash_Player 19.0.0.185, Haskell_Platform 7.10.2, Orchard_Software_Centre_Scripts 1.1, and Office_2011 14.2.0. Each card displays the software name and version, along with a small icon and a date indicating when it was added or updated. The Trello interface includes a top navigation bar with the Trello logo, a user profile for Marko Jung, and a sidebar with a "Boards" section.

| Unstable | To Testing | Testing | To Stable | Stable |
|-------------------------------------|------------|------------------------------|-----------|-------------------------------------|
| Adium 1.5.10 | | Mou 0.8.7 | | ProjectLibre 1.6.2 |
| Google_Voice_And_Video 5.40.2.0 | | Spotify 1.0.14.124.g4dfabc51 | | Emacs_For_Mac_OS_X 24.5 |
| Oracle_Java_7_JDK 1.7.79.15 | | LibreOffice 5.0.2002 | | Firefox 41.0 |
| Lync_Web_App_Plugin 15.8 | | The_Unarchiver 3.10.1 | | Office_2011_Update 14.1.0 |
| Tunnelblick 3.5.4 (build 4270.4395) | | Dropbox 3.10.5 | | Adobe_Reader 11.0.10 |
| MS_Outlook_2016 15.14.2 | | OSX_Fuse 2.8.1.10.9 | | Adobe_AIR 19.0.0.190 |
| VirtualBox 5.0.4 | | Dropbox 3.10.6 | | Adobe_Flash_Player 19.0.0.185 |
| Evernote 6.1.1 | | | | Haskell_Platform 7.10.2 |
| Skitch 2.7.8 | | | | Orchard_Software_Centre_Scripts 1.1 |
| | | | | Office_2011 14.2.0 |

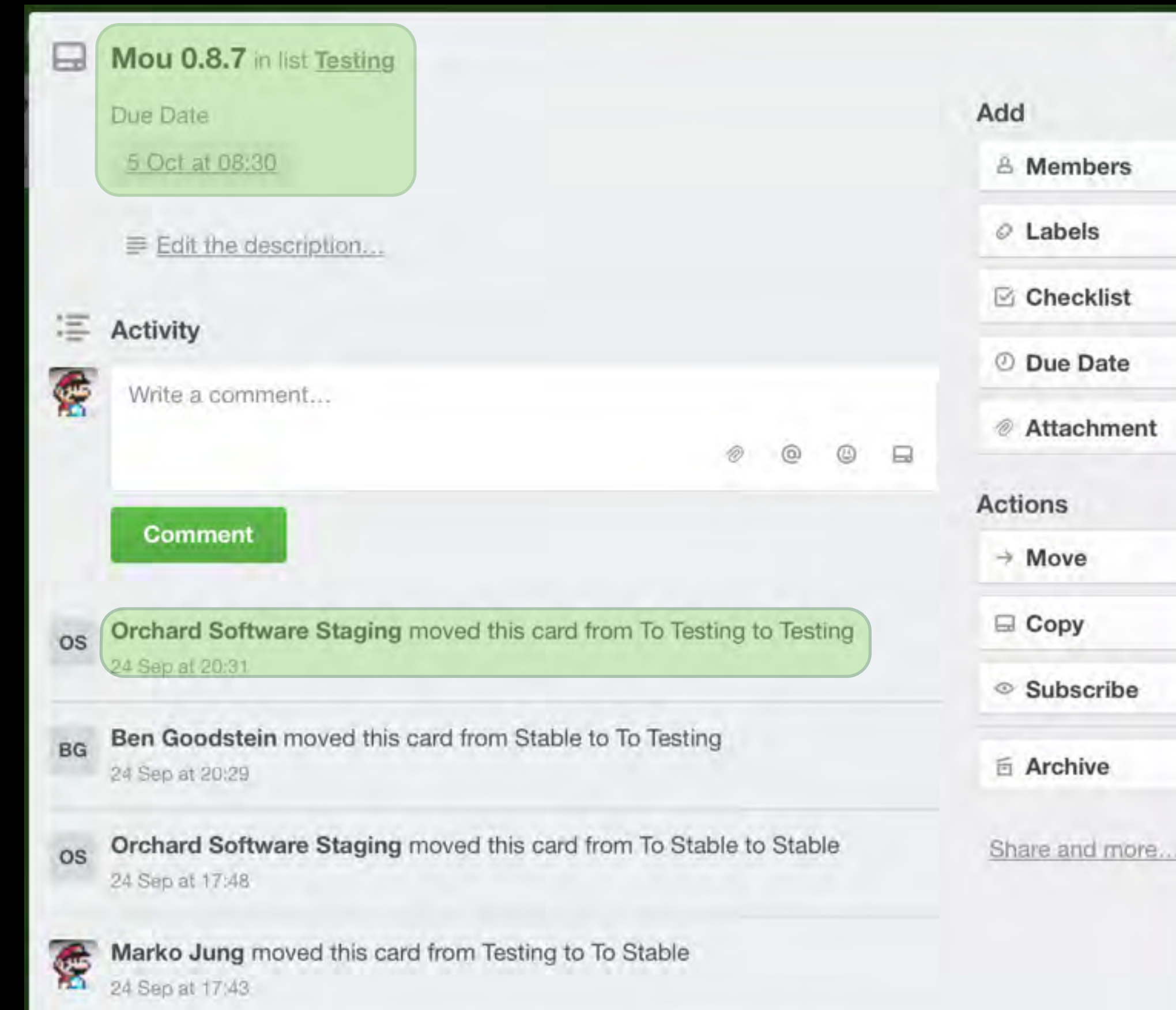
MUNKI-STAGING



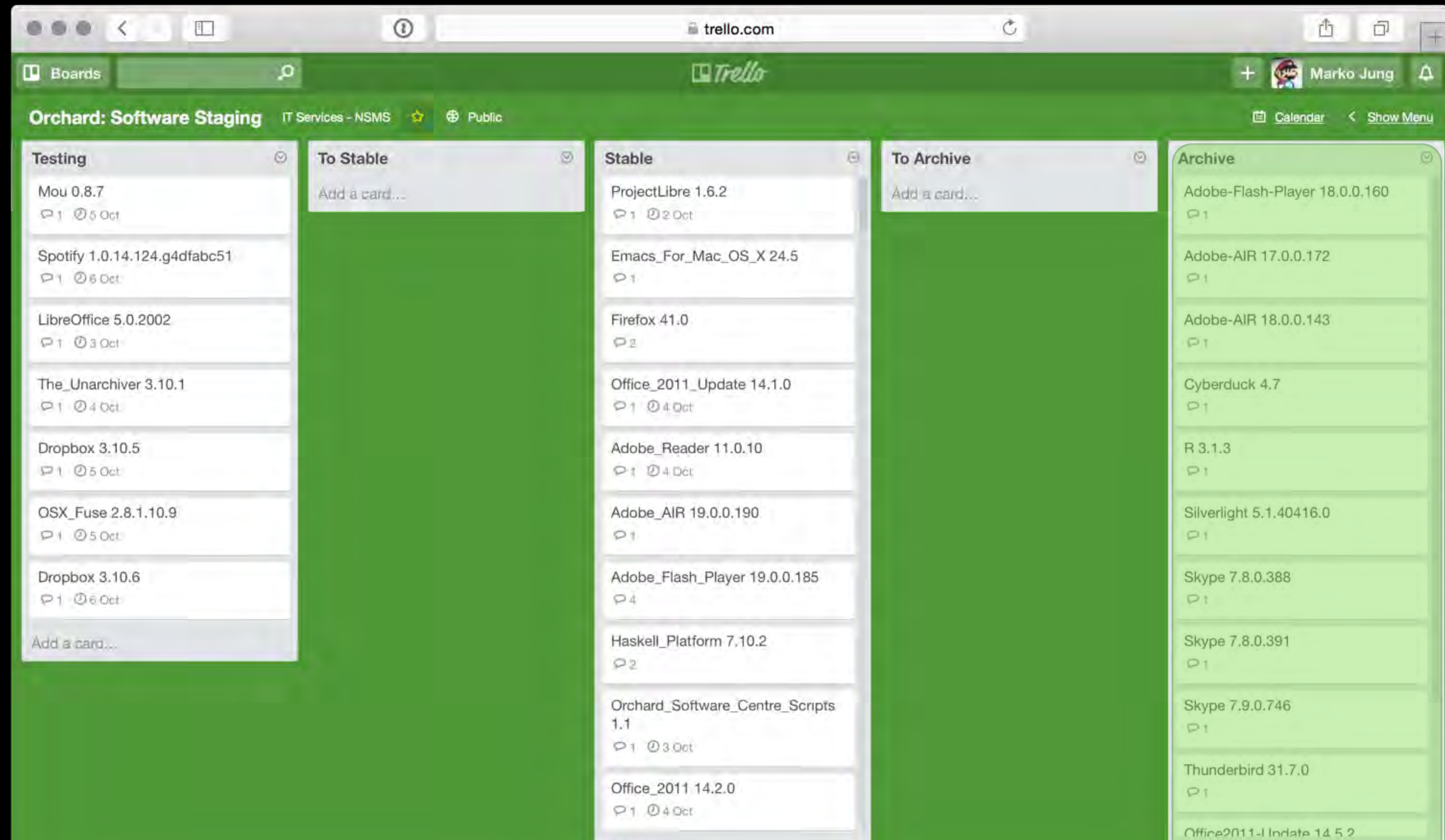
- Rewrite of G. Gilbert's munki-trello using a more object oriented design
- New features:
 - Unlimited catalogs / Trello lists
 - Multiple munki repositories
 - Automated promotion
 - RSS feed generation
 - Configuration file



<https://github.com/ox-it/munki-staging>



MUNKI-STAGING



The screenshot shows a Trello board titled "Orchard: Software Staging" with a green background. The board is organized into five columns representing a software staging workflow: Testing, To Stable, Stable, To Archive, and Archive. Each column contains a list of software packages with their versions and dates. The "Testing" column has 7 items, "To Stable" is empty, "Stable" has 9 items, "To Archive" is empty, and "Archive" has 10 items. The interface includes a top navigation bar with "Boards", a search icon, the Trello logo, and a user profile for "Marko Jung". The board title "Orchard: Software Staging" is followed by "IT Services - NSMS" and "Public".

| Testing | To Stable | Stable | To Archive | Archive |
|---|---------------|--|---------------|------------------------------------|
| Mou 0.8.7 1 5 Oct | Add a card... | ProjectLibre 1.6.2 1 2 Oct | Add a card... | Adobe-Flash-Player 18.0.0.160 1 |
| Spotify 1.0.14.124.g4dfabc51 1 5 Oct | | Emacs_For_Mac_OS_X 24.5 1 | | Adobe-AIR 17.0.0.172 1 |
| LibreOffice 5.0.2002 1 3 Oct | | Firefox 41.0 2 | | Adobe-AIR 18.0.0.143 1 |
| The_Unarchiver 3.10.1 1 4 Oct | | Office_2011_Update 14.1.0 1 4 Oct | | Cyberduck 4.7 1 |
| Dropbox 3.10.5 1 5 Oct | | Adobe_Reader 11.0.10 1 4 Oct | | R 3.1.3 1 |
| OSX_Fuse 2.8.1.10.9 1 5 Oct | | Adobe_AIR 19.0.0.190 1 | | Silverlight 5.1.40416.0 1 |
| Dropbox 3.10.6 1 6 Oct | | Adobe_Flash_Player 19.0.0.185 4 | | Skype 7.8.0.388 1 |
| Add a card... | | Haskell_Platform 7.10.2 2 | | Skype 7.8.0.391 1 |
| | | Orchard_Software_Centre_Scripts 1.1 1 3 Oct | | Skype 7.9.0.746 1 |
| | | Office_2011 14.2.0 1 4 Oct | | Thunderbird 31.7.0 1 |
| | | | | Office2011-l Indate 14 5 2 |

MUNKI-STAGING

1. Create a virtualenv including requirements,

```
$ virtualenv munki-staging
```

```
$ source munki-staging/bin/activate
```

```
$ pip install trello
```

2. Ensure makecatalogs is present on your system (runs on Linux, too)

3. Clone or download munki-staging

```
$ git clone https://github.com/ox-it/munki-staging.git
```

4. Create Trello APP key and set-up Trello user token

<https://trello.com/app-key>

<https://trello.com/docs/gettingstarted/#token>

MUNKI-STAGING

5. Write your configuration based on the provided template

```
# Example settings for a testing catalog and list
[munki_catalog_testing]
list=Testing
catalog=testing
stage_days=14
autostage=1
stage_to=production
stage_from=development
```

6. Run the script periodically (cron, launchd)



REBRANDING MUNKI



Two user facing management tools might be confusing:

1. ~~JAMF Self Service~~
Orchard Support Centre
2. ~~Managed Software Center~~
Orchard Software Centre

REBRANDING MUNKI

Customised build of the munkitools meta-package:

1. Clone git source
2. Replace strings, artwork, etc.
3. Add preflight and postflight scripts for munki
4. Add package postinstall script to configure munki
5. Use upstream build script to compile and package



<https://github.com/ox-it/munki-rebrand>

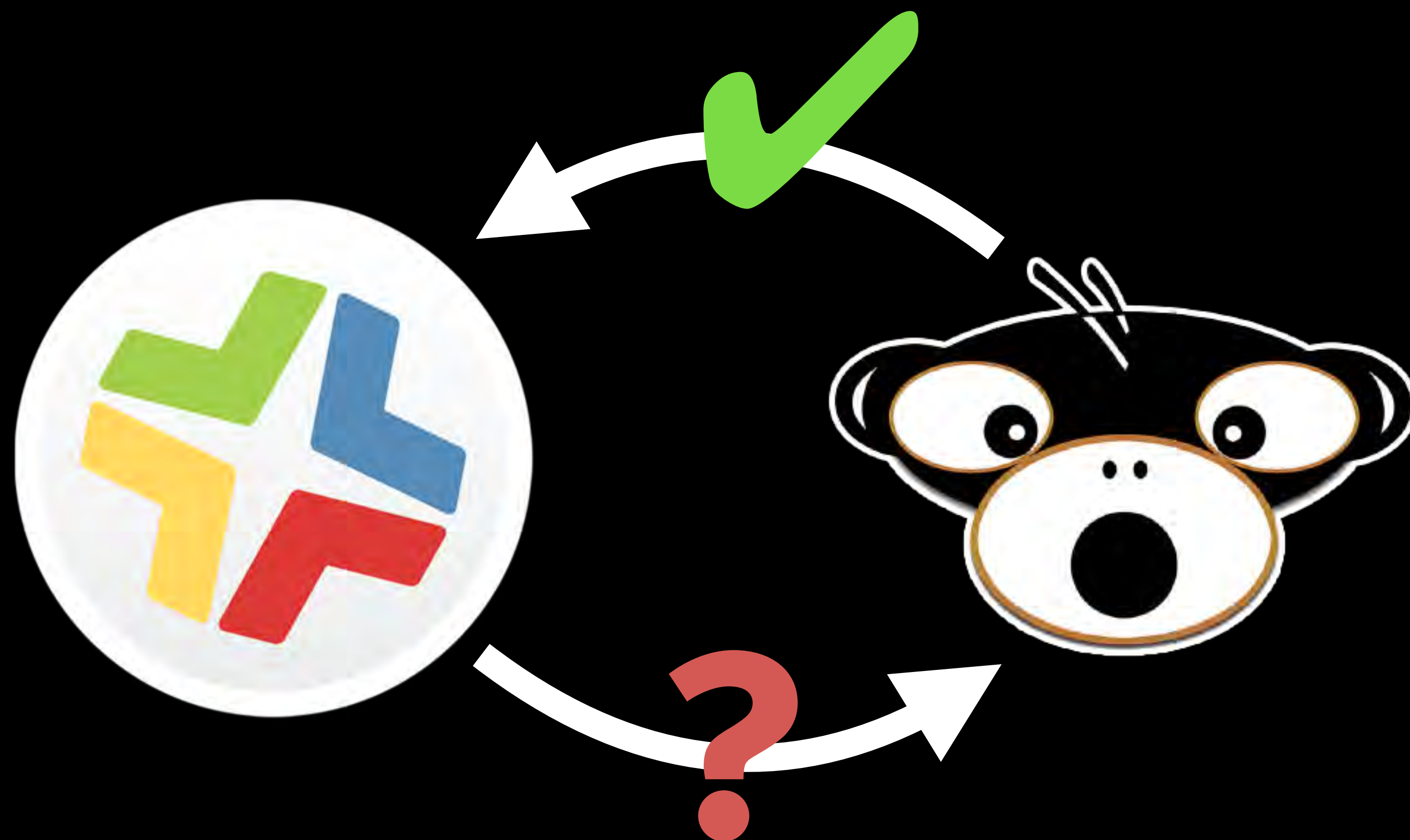
Kudos to Arjen van Bochoven

<https://gist.github.com/bochoven/c1c656e0c2e1b1078dfd>

ENSURING JSS INVENTORY

1. Save modification time (mtime) of Munki install log (*preflight*)
2. Run `managedsoftwareupdate` operations
3. Iff Munki install log mtime changed, execute
`jamf recon`
to update the computer inventory in the JSS (*postflight*).

(Please see muni-rebrand repo for preflight and postflight scripts)



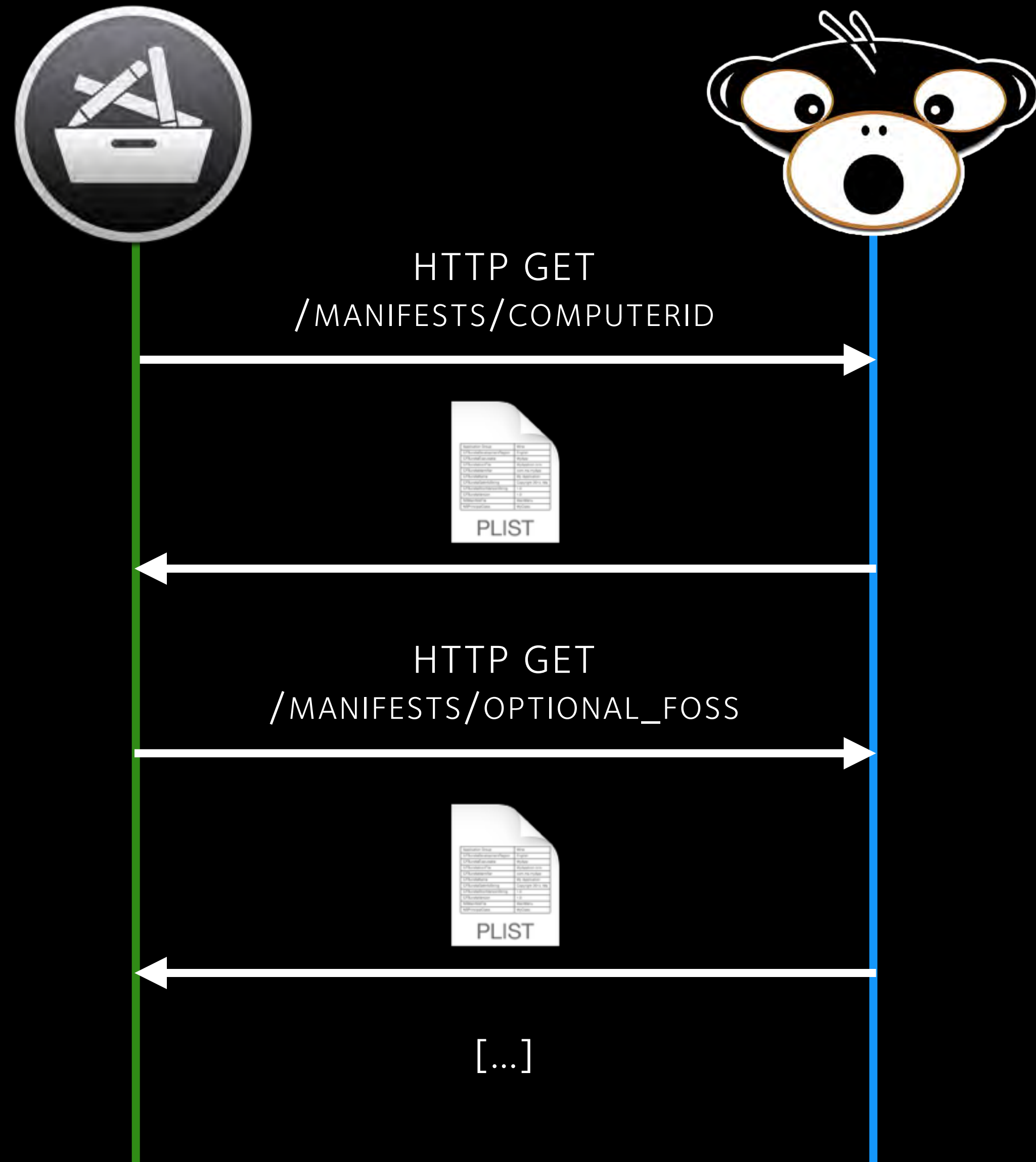
DEMO

MUNKI MANIFESTS

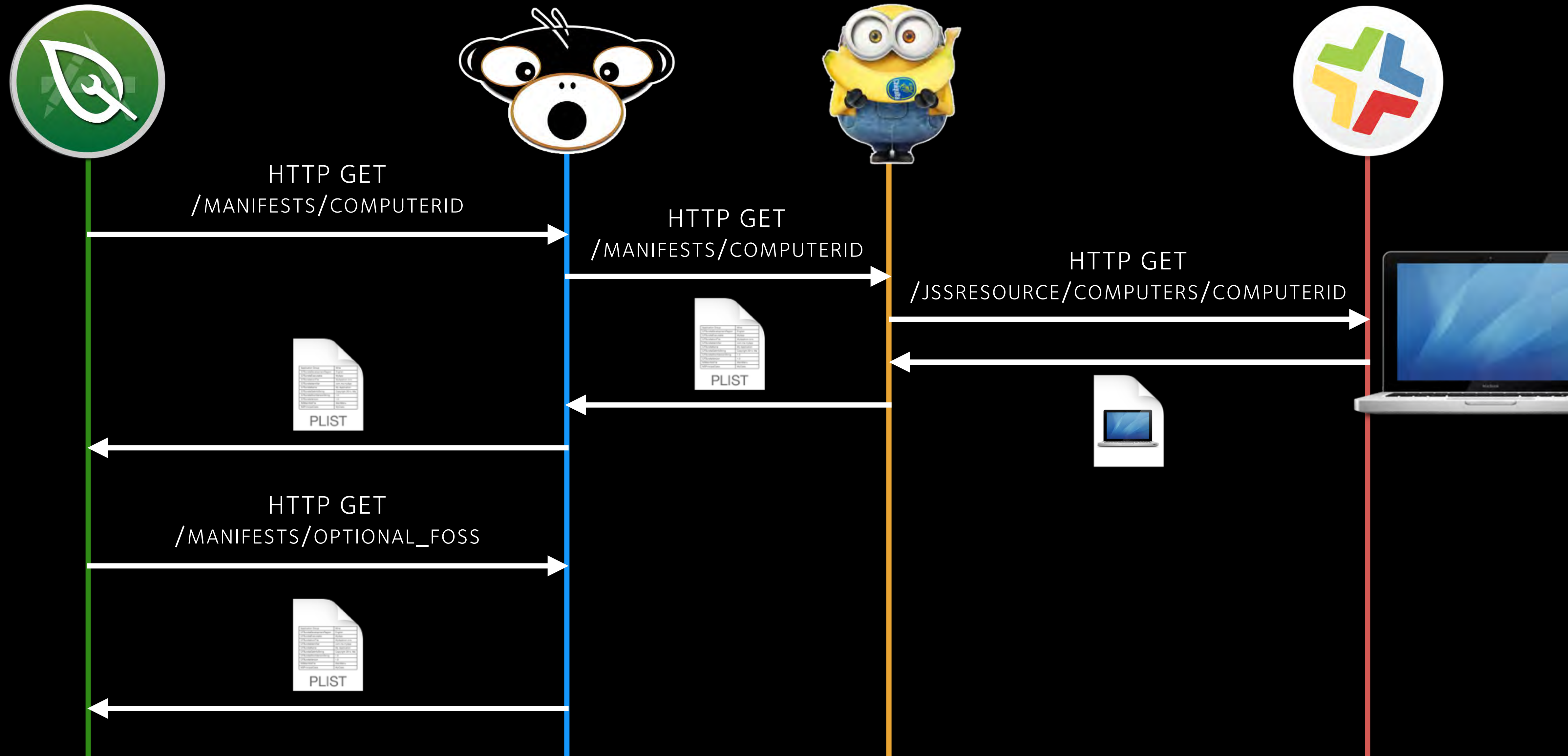
```
<dict>
  <key>catalogs</key>
  <array>
    <string>stable</string>
  </array>
  <key>included_manifests</key>
  <array/>
  <key>managed_installs</key>
  <array/>
  <key>managed_uninstalls</key>
  <array/>
  <key>managed_updates</key>
  <array/>
  <key>optional_installs</key>
  <array>
    <string>Firefox</string>
  </array>
</dict>
```

```
<dict>
  <key>catalogs</key>
  <array>
    <string>testing</string>
    <string>stable</string>
  </array>
  <key>included_manifests</key>
  <array>
    <string>foss</string>
    <string>office</string>
  <array>
  <key>managed_installs</key>
  <array/>
  <key>managed_uninstalls</key>
  <array/>
  <key>managed_updates</key>
  <array/>
  <key>optional_installs</key>
  <array>
    <string>Firefox</string>
  </array>
</dict>
```


MESSAGE FLOW



MESSAGE FLOW





DYNAMIC MANIFESTS



- Map JSS Computer inventory information to Munki Manifest elements
 - match anything provided in the API XML output
 - add or remove content to a template
- New django App for MunkiWebAdmin
 - Merge with Steve Kueng's fork
 - Upgrade to django 1.8
- Used in production environment
 - Actively maintained by Oxford Mac team




<http://github.com/ox-it/munkiwebadmin>



DYNAMIC MANIFESTS



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 JSS Mappings

Catalogs

Manifests

JSS Mappings

JSS Computer Attribute Mappings

| | JSS Attribute Type | Value | Type | Priority | Actions |
|-------------------------------------|---------------------|------------------------------|----------|----------|---------|
| <input checked="" type="checkbox"/> | Department | Research & Development | foss | 0 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Device Ownership : ACME Inc. | office | 0 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : stable | stable | -1 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : testing | stable | -1 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : testing | testing | -2 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : unstable | stable | -1 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : unstable | testing | -2 | Edit |
| <input checked="" type="checkbox"/> | Extension Attribute | Software Release : unstable | unstable | -3 | Edit |

DEMO

DEPLOYMENT WORKFLOWS



NetBoot & Imaging



Enrolment



OS Upgrade



DEP / MDM



- Authoritative Inventory
- MDM (Profiles, DEP, VPP)
- Imaging
- Orchard Support Centre (Self Service)



- Software deployment
- Orchard Software Centre





THANK YOU

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 GITHUB.COM/OX-IT/